Finding of No Significant Impact and Decision for Aquatic Rodent Damage Management in Texas

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS), Wildlife Services (WS) program responds to a variety of requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife in Texas. WS activities are conducted in cooperation with other federal, state, and local agencies, as well as private organizations and individuals.

Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management (WDM) actions maybe categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). WS prepared an environmental assessment (EA) to comply with APHIS NEPA implementing regulations and interagency agreements, to facilitate planning, interagency coordination, streamline program management, and involve the public. The predecisional EA, released by WS in April 2004, documented the need for aquatic mammal [beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), nutria (*Myocastor coypus*), and river otter (*Lutra canadensis*)] damage management (AMDM) in Texas and assessed potential impacts of various alternatives in relation to issues analyzed for responding to aquatic mammal damage problems.

WS functions as part of a cooperative program within Texas, henceforth known as the Texas Wildlife Services Program (TWSP), and operates under a Memorandum of Understanding (MOU) with Texas Cooperative Extension (Extension), within The Texas A&M University System, and the [redacted]. TWSP receives state legislative support through Senate Bill 198, Chapter 317, Acts of the 52nd Regular Session of the Texas Legislature. This Bill mandates that the State of Texas shall cooperate through the A&M System, with appropriate federal officers and agencies, in controlling animals to protect livestock, food and feed supplies, crops, and rangeland. TWSP conducts these activities through this cooperative relationship as Extension-WS, under the A&M System administration. TWSP is the agency in Texas that has the expertise to respond to the majority of aquatic mammal damage complaints.

The state Extension-WS and federal WS program cooperate further, through a separate MOU, with the [redacted] that identifies requested services on a more localized basis. The [redacted] consists of local cooperative groups, including county governments, private associations, or individuals. This MOU also allows for sharing the direct operating costs of providing wildlife damage management services.

TWSP's proposed action was to allow the use of the full range of AMDM methods on all lands authorized in the State for the protection of agriculture, property, natural resources, and public safety. TWSP cooperates closely with the Texas Parks and Wildlife Department (TPWD). In Texas, beaver, muskrat, nutria, and otter are classified as furbearers. Furbearers are protected by State law and TPWD is responsible for management of these species. Under State law, though, private landowners or their lessees, public entities or others can take furbearers when these species are a nuisance or causing damage. TWSP is the agency in Texas that responds to aquatic mammal damage complaints. However, TWSP works with TPWD to assist in providing

data on harvest so that they can determine management objectives for the different species of aquatic mammals.

A major overarching factor in determining how to analyze potential environmental impacts of TWSP's involvement in AMDM is that such management will apparently be conducted by state and local government, or private entities as allowed by State law that are not subject to compliance with NEPA unless TWSP is involved. TWSP has federal authority to conduct wildlife damage management. TWSP also has a policy of abiding by state laws and has agreed to be consistent with any management direction or plans that is established on behalf of the State. TWSP is provided funds from the State Legislature to carry out this work under State law. The human environment, with present abundance of aquatic mammals, would likely be the same whether or not WS cooperated with State entities forming TWSP. Personnel that respond to aquatic mammal damage are primarily State employees with federal oversight. AMDM would likely continue in Texas with or without TWSP involvement, through Extension or another state agency.

Public Involvement

A total of 4 draft EAs were sent to agencies with professional expertise covering different aspects (ie. wildlife populations, water) of the EA for their review and comments. Comments received from these agencies were incorporated into the EA. Following interagency review of the draft EA, an EA was prepared and released to the public for a 30-day comment period. A notice of availability was sent directly to 30 interested public and private organizations and individuals. In addition, a "Notice of Availability" of the predecisional EA was published in 3 Texas newspapers (the Austin American Statesmen, the Dallas Morning News, and the Houston Chronicle) for 1 or 3 consecutive days. The legal notices appeared in the newspapers from approximately March 29-31, 2004. As a result of the Notices of Availability 9 EAs were sent out. The deadline for comments was set at April 30,2004.

Public Comments

A total of 1 comment letter was received in response to the predecisional EA from a nonprofit organization. Most all comments in the letter were adequately addressed in the predecisional EA, but some will be discussed further where necessary to provide clarity. The comments that were addressed are discussed below.

Comment 1: A comment was made that the EA should be substantially revised or followed by an Environmental Impact Statement (EIS) because the species should be treated separately because the issues involved are too controversial, incompletely addressed, indiscriminate methods are proposed (toxicants), and more information is needed on TWSP's preferences and approaches.

Response 1: We disagree with the assertion that the EA needs to be substantially revised. The EA was complete and we believe that the EA speaks for itself.

The EA and this document is being prepared to allow the decision-maker to determine whether or not to prepare an EIS or to select an alternative if there are no significant impacts. The EA did not find any significant impacts on the quality of the human environment by carrying out the Proposed Action.

The issues involved in the EA are controversial, that is why TWSP involved the public prior to completing a Record of Decision. However, the best scientific information was used to determine whether or not a significant impact to the human environment would be caused under the different alternatives. These are discussed in the EA and we believe that the EA speaks for itself.

TWSP is aware that chemical pesticide use can be quite concerning to the public, especially the public that is unfamiliar with that chemical, the labeling, and how it is used. The use of zinc phosphide in muskrat and nutria damage management is safe with a low potential to affect a few nontargets species. USDA (1997 - Appendix P) completed a formal risk assessment and concluded that the use of zinc phosphide presented few risks, especially in AMDM.

TWSP uses Integrated WDM (IWDM) consistently to resolve aquatic mammal problems. IWDM considers all available approved methods of prevention and management to reduce damage caused by wildlife and was discussed thoroughly in the EA in Sections 1.4, 3.2.1.1 and 3.2.1.2. TWSP Specialists are professionals and realize when and where these methods will work and run through them in the TWSP decision-making process (USDA 1997) and do give preference to certain methods unless they have decided that they would be the most appropriate to use. TWSP applies IWDM (WS Directive 2.105) and uses the TWSP Decision Model (Slate et al. 1992) at each site to determine the most appropriate methods and strategies to resolve aquatic mammal damage. For this concern, we believe that the EA speaks for itself.

Comment 2: A comment indicated that necessary information in the description of the Proposed Action was insufficient vague, and speculative with no clear idea of what action TWSP may take in response to requests for assistance with aquatic mammal conflicts.

Response 2: TWSP disagrees with the comment that the EA was weak in its discussion of the Proposed Action and believes that the EA had ample discussion of the Proposed Action and methods used in AMDM in Sections 1.4 and 3.2.1 of the EA. The EA is often vague because TWSP does not know where and when TWSP will be requested to conduct AMDM and TWSP cannot predict this except to say that it will be in the range of aquatic mammals in Texas. Planning for the management of aquatic mammal damage must be viewed as being conceptually similar to federal or other agency actions whose missions are to stop or prevent adverse consequences from anticipated future events for which the actual sites and locations where they will occur are unknown but could be anywhere in a defined geographic area. Examples of such agencies and programs include fire and police departments, emergency clean-up organizations, and insurance companies. Similarly, TWSP Specialists must determine at a site where they have been requested to provide assistance specifically, a management strategy that will be used to resolve the problem; the TWSP Decision-model (Slate et al. 1992) is used and was discussed thoroughly in USDA (1997) with specific examples for beaver damage scenarios. It is impossible to run through all the scenarios that TWSP Specialists face because each damage situation is fairly unique, but management strategies for the different situations often recur and the methods were given. In Texas for example, where an irrigation ditch (a man-made structure) is dammed and flood waters expand out over cropland, often the beaver are removed lethally because they do not meet with the landowner's structure (getting water from point A to point B) or land-use (crop) objectives, and none of the AMDM methods are likely to get the beaver to move on their own. Additionally, the dam is usually removed and the landowner is often told about exclusionary techniques that will keep beaver from returning unless they venture over land. Section 1.3 of the EA gives information of the types of damage aquatic mammals cause and Section 3.2.1 gives information on the methods that are used to resolve aquatic mammal damage. We believe that these Sections provide enough information to assimilate strategies used in AMDM along with information from USDA (1997) and, thus, we believe the EA speaks for itself.

Comment 3: The commentor thought that no information was given on the frequency of various management actions and how often the various management methods are employed. A simplistic model, the TWSP Decision-making process (Slate et al. 1992), described in the Proposed Action does not give an idea of what management methods will be used to resolve problems. While the EA reported the number of animals killed, it did not report the number of actions taken in recent years or even the total number of times TWSP provided assistance. Such information is vital in order to reasonably assess the current program, the Proposed Action. The incentives and disincentives for TWSP to engage in different management approaches should be spelled out. Economic incentives favor lethal control.

Response 3: TWSP disagrees and believes that the Proposed Action was amply discussed in Sections 1.4 and 3.2.1 of the EA. Currently, the Management Information System (MIS), the computer tracking system used by TWSP to obtain data on AMDM, does not track all information that occurs for each damage request and how each complaint is resolved. The MIS does track the number of requests that are handled strictly by technical assistance and those that are handled through direct damage management which is often coupled with technical assistance that is not recorded. For example, Table 1a of the EA gives the number of requests for beaver for FY00 to FY02 which averaged over 1,870 requests per

year. Of those, TWSP handled, on average, 670 by technical assistance alone, about a third, and the rest through direct control often combined with technical assistance. It is unknown whether or not each direct control project resulted in the take of beaver. Beaver do cause the most requests for assistance each year.

TWSP began the development of a new MIS system called MIS 2000 to take advantage of new technologies, but it has not been implemented. It is expected that the new system will be in place in FY 05. The new system will potentially capture such information as all of the methods used to resolve a complaint and provide a report that quantifies this. However, in lieu of having that information, TWSP did list current methods available for use or recommendation by TWSP Specialists. Per TWSP Policy, the array of AMDM methods are considered in determining an appropriate strategy (the TWSP Decision-making model (Slate et al. 1992)) to resolve a damage problem (this was discussed thoroughly in USDA (1997) and examples of specific beaver damage situations in urban and rural areas were addressed (USDA 1997 - Appendix N). Additionally, TWSP dissemination of information on the potential of using different methods is difficult to quantify because it is not restricted to conversations between TWSP field specialists and resource owners. The National Wildlife Research Center (NWRC - WS's research arm) and TWSP operational personnel use journal articles and presentations at meetings, conferences, and workshops to present data on nonlethal alternatives which cannot be quantified as to the extent of their effect.

Finally, the analysis in Chapter 4 provides the information necessary to assess the current program and impacts on the quality of the human environment. TWSP feels that the analysis in Chapter 4 speaks for itself.

Comment 4: The commentor questioned how well the AMDM program works and the cost effectiveness of the AMDM program.

Response 4: TWSP believes that if it were not effective, funding for the current program would not be provided by the State of Texas and other cooperators, and, therefore, WS has determined the current program must be working well and cost effective. Cost-effectiveness is believed to be high for such a program. TWSP Specialists, that respond to damage complaints, estimate the value of the damage done by beaver and muskrat when they arrive at a site or ask the cooperator what they believe the value to be. A common misconception that the public has when using damage data is that the damage that TWSP documents is the total damage. Actually, this is the damage prior to TWSP intervention. It gives an indication of aquatic mammal damage in Texas (an index), but does not actually reflect cost-effectiveness. Without intervention, damage would continue and would be expected to be much greater. Often it would be expected that damage would escalate and surpass the damage that had already been done. Intervention eliminates or reduces further damage to acceptable levels for the landowner who has already lost the value of damage as identified by TWSP Specialists. Damage could be the flooding of crops, a house, and other property which, if allowed to continue, could have enormous costs. A good example is the potential flooding of a house; TWSP receives periodic requests where flooding waters are encroaching a house. Most times, TWSP can remove the beaver and newly created dam prior to any real damage. If the beaver were allowed to continue to build the dam, the house could be flooded, and damage could rapidly escalate into the thousands should the flood waters reach the house.

A very challenging task for TWSP has been to determine the effectiveness of TWSP applied AMDM because one must first predict how much more damage would have occurred if a control strategy had not been implemented. With this number, cost effectiveness can be determined for resources with monetary value, but cannot for nonmonetary values such as the protection of human health. WS in North Carolina, where beaver are a primary focus of the WS program (about 50 to 100 times the effort of the Texas AMDM program), has determined the cost-effectiveness by quantifying the damage saved for projects involving monetary values (WS 2003). They have been able to generate data to determine the overall cost savings of conducting beaver damage management by estimating the value of resources remaining in an area that would have likely been damaged should damage have been allowed to continue. WS (2003) determined that the cost:benefit ratio of the program was 1:7.1; for every dollar spent by the WS program the landowner realized a $7.10 return. On a project in the Mississippi WS Program, it was estimated that $198,000 was saved on one timber protection project which cost $11,000, a 1:18 cost:benefit ratio. To obtain this estimate requires considerable effort on the part of the WS Specialists to acquire the additional data and a computer database able to accept it. Collecting the necessary data (resources saved) to determine cost-effectiveness is burdensome and would not substantially improve the analysis in the EA and the decision-making process. Therefore, we believe that the EA speaks for itself.

Comment 5: The commentor questioned what was the basis for saying that illegal activities would increase if TWSP did not conduct AMDM.

Response 5: This is a potential issue brought out in the EA because TWSP believes that this would be more likely to occur if professional assistance in AMDM was not given. USDA (1997) discusses examples of the potential for misuse of wildlife damage management methods as a result of no program. USDA cited a document that discussed case histories of the illegal use or misuse of pesticides to remedy wildlife problems (White et al. 1989). This is not uncommon. Just a quick look on the internet and you can find several cases/convictions for frustrated property owners illegally using wildlife damage management methods such as pesticides and traps to resolve a damage problem. For example, South Dakota, ranchers have been accused of using an illegal toxin to kill prairie dogs (Rapid City Journal 2004); in Georgia on a quail plantation, predatory birds were being killed by eggs that had been injected with carbofuran (the Federal Wildlife Officer 2000); in Oklahoma , Federal agents charged 31 individuals with illegally trapping and killing hawks and owls to protect fighting chickens (USFWS 2003). The Texas Department of Agriculture has a website and brochure devoted solely to preventing pesticide misuse in controlling agricultural pests (Texas Department of Agriculture 2004). Similarly, the Britain Department for Environment, Food and Rural Affairs has a "Campaign Against Illegally Poisoning of Animals" (Dacko 2004). WS Specialists have heard of many anecdotal reports of people using different methods that would be unsafe for the environment such as pouring the herbicide paraquat into a stream to get rid of beavers. The commentors may believe that these types of activities do not take place, but they do. TWSP Specialists typically do not assist persons that already have an ongoing wildlife damage management program, especially where they are controlling the same species with a pesticide (WS Directive 2.401). TWSP Specialists frequently have been requested for assistance because people using wildlife damage management techniques improperly are having trouble resolving problems; most people were unaware of TWSP and when they find out that TWSP has a wildlife damage management program, they often abandon their efforts and let TWSP resolve or assist them with their problem. TWSP believes that if TWSP Specialists respond to their wildlife damage complaints either with technical assistance or direct control, and makes a professional effort to reduce losses, that at least those persons would not be as likely to use improper/illegal techniques.

Comment 6: A comment suggested that harm wildlife can do to humans was overstated, especially where giardiasis and West Nile virus were mentioned.

Response 6: TWSP believes that these were not overstated, but are potential problems associated with beavers. Beaver are carriers of the intestinal parasite *Giardia lamblia*, also known as *G. duodenalis* and *G intestinalis*, which can contaminate water supplies and cause outbreaks of the disease giardiasis in humans (Woodward 1983, Beach and McCulloch 1985, Wade and Ramsey 1986, Miller and Yarrow 1994, Ainsworth 2002, Rockwell 2003). Furness et al. (2000) from CDC reported that *Giardia* is the most commonly detected intestinal protozoan in the world and it likely causes a range of 100,000 to 2.5 million cases annually in the United States. Reports for different states ranged from 0.9 to 42.3 per 100,000 people. Though the infection source is frequently unknown, most of the cases in humans probably occur from person to person contact and is most frequently diagnosed in the 0-5 and 31-40 age groups during late summer to early fall, coinciding with recreational water use at communal pools and swimming areas including lakes (Furness et al. 2000). Giardiasis has been referred to as "beaver fever" because there has been a presumed link to water-dwelling animals starting with early reports of the disease in Canada. However, it now appears that it is more likely that humans have carried the parasite into the wilderness and that beavers may actually be the victims. In particular, there is a growing amount of data showing that beavers living downstream from campgrounds have a high *Giardia* infection rate compared to a near-zero rate for beavers living in more remote areas. In either case, beavers can and do contract giardiasis. Being water-dwellers, they are able to contaminate water more directly than an animal that defecates on the ground (Rockwell 2003). Undoubtedly, beavers are the source of some infections in the United States, but mostly as a result of prior infection by people.

Beaver also have been linked to other human diseases. They are known carriers of tularemia, a bacterial disease that is transmittable to humans through bites by insect vectors or infected animals or by handling animals or carcasses which are infected (Wade and Ramsey 1986); tularemia is also responsible for large-scale beaver die-offs (Addison et al. 1998). Skinner et al. (1984) found that in cattle-ranching sections of Wyoming the fecal bacterial count was much higher in beaver ponds than in other ponds, something that can be a concern to ranchers and recreationists. On rare occasions,

beaver may contract the rabies virus and attack humans. In February 1999, a beaver attacked and wounded a dog and chased children that were playing near a stream in Vienna, Virginia; approximately a week later, a beaver was found dead at the site and tested positive for rabies (E. Hodnett, Fairfax Virginia Animal Control, pers. comm. 2002).

Beaver do create areas conducive for mosquitoes, especially following dam building. Once becoming a wetland and occupied by fish, mosquito larva may not do as well. However, in the first phases of development and in areas of drought, beaver ponds may be the only water available, and hence, do have the potential for mosquito production. It is only stated in the EA as a potential source, and thus, WS believes that this threat was not overstated.

Comment 7: The commentor was concerned that the EA dismisses floodplains from analysis and cites impacts to floodplain resources as a reason for the proposed program.

Response 7: WS believes that floodplains are not impacted by beavers except insignificantly. Beavers flood areas that typically have not previously been flooded. Some resources may be impacted that are in floodplain, but the floodplain itself is not impacted. WS believes for this concern the EA speaks for itself.

Comment 8: Many nonlethal methods that have been researched including those from NWRC (Nolte et al. 2000, 2003) were not included in the methods sections and much of the information was outdated. Abrasives are only briefly mentioned in the EA and it appears that TWSP has not kept up with more recent advances in technology.

Response 8: TWSP is very aware of current nonlethal technology regarding abrasives, electrical barriers and pond-levelers, but realize that they only work in certain situations. Recent research indicated the effectiveness of such devices are at best 50%; landowners must be committed to maintaining the devices for them to work and these devices work best when beaver damage management is conducted to periodically reduce the population (Nolte et al. 2003). Additionally, the expense associated with such devices may preclude many landowners from installing them because they do not have the money. We believe the EA speaks for itself.

Comment 9: The commentor was concerned that the EA was missing an Alternative nonlethal before lethal control.

Response 9: This was addressed in 3.3.7 and we believe that the EA speaks for itself.

Comment 10: Drowning and so-called "quick-kill" traps are inhumane and clearly condemned by the AVMA 2000 Euthansia Report. Conibears result in an inhumane death. Drowning is not euthanasia (Ludders et al. 1999). The only acceptable methods of euthanasia are live-capture with subsequent euthanasia by lethal injection, CO2 inhalation, or gunshot. An animal's suffering is an objective fact. The EA did not discuss the issue of humaneness relative to nontarget injury from AMDM methods.

Response 10: Drown sets are commonly used for aquatic mammals with leghold traps and snares. The AVMA 2000 panel on euthanasia (Beavers et al. 2001) listed drowning as an inhumane method of euthanasia, but offered no supporting evidence for such. The AVMA panel report (Beavers et al. 2001) was intended for use by members of the veterinarian profession and recommendations were intended to serve as guidelines for veterinarians who must use their professional judgement in applying them to the various settings where animals are to be euthanized. Because this was brought up as an issue and was only discussed briefly in the EA, Section 2.2.2 in the EA was expanded to include a more thorough discussion of the issue.

Quick-kill traps have been a standard name associated with the Conibear type traps for years. However, because this was brought up as an issue, TWSP expanded the humaneness section in 2.2.2 to discuss this issue further. However, TWSP still believes that most beaver, especially smaller ones, and muskrats die quickly as a result of injury/drowning in conibears. Gilbert (1976) stated that most animals were clinically dead in 1 ½ minutes (EEG), but their hearts kept beating past 10 minutes (ECG) as a result of their physiology. However, the Conibears used by him had half of the force that he used for a beaver to survive. His animals were sedated and not in water and therefore, provide less evidence that they survive great lengths of time underwater because of the stress and inability to breath. Conibear traps are very efficient at capturing aquatic mammals. The trap is designed such to kill them soon after capture. Smaller size aquatic

mammals including muskrat, nutria, and juvenile beaver and otter probably die very quickly after the trap is closed, especially when set appropriately. Those that do survive may hold their breath until they die, which for a relatively short period of time could be painful. However, this issue was expanded in the EA.

TWSP believes that the issue of humaness was analyzed thoroughly enough in 4.2.3 for the decision-maker to select an alternative. Some AMDM techniques, as discussed above, are considered to be inhumane. Yet, they still are the best methods for resolving problems in AMDM and, in the case of drowning, cause the quickest death for an animal that is slated for removal. If the only acceptable humane methods of euthanasia are following live capture, many complaints would not be resolved because live traps are often the least successful method available to TWSP Specialist that need to resolve complaints. Thus, this creates a tradeoff between a quick death and a drawn out death with potential for injury ending in euthanasia. AMDM techniques considered inhumane by some people would be used most professionally with the least amount of animal pain and suffering under the Proposed Alternative whereas these could increase under the other Alternatives as analyzed in Section 4.2.3.

The commentor stated that animal suffering is an objective fact. Unfortunately, animal suffering is only a subjective fact, not objective, that has been attempted to be measured objectively. Human stress indicators can be objectively measured in animals such as epinephrine, but humans do not have the ability to perceive an animal's pain and suffering because that would be anthropomorphic (ascribing human characteristics to nonhuman things). Human's perceive what a person would feel in that situation, which in itself is different for every individual (i.e., a person may play football with injuries such as a broken thumb and only notice the injury on occasion whereas the next person may stay home from work and take pain medication for the same injury). Therefore, while we believe that animals suffer similarly to humans in some situations, it is only subjective and not an objective fact.

As discussed in comment 6 above, it is noted that nontargets can be taken in AMDM. Quick-kill traps were noted that they do not always kill an animal, especially nontarget animals larger than the intended target and that the EA did not discuss their pain and suffering. The issues of nontarget take and humaneness were discussed in the EA. Nontargets are taken with AMDM methods and the number of animals taken as nontargets would likely be most under the other Alternatives analyzed in the EA because the use of AMDM methods would likely increase by the general public including those inexperienced in their use. Therefore, we believe that the overall animal pain and suffering would be least under the Proposed Action. Even so, TWSP expects to take some nontargets that survive in quick-kill traps. The most common animal that survives quick-kill traps are turtles because their carapace protects them. It is unknown the amount of pain and suffering that they incur. However, they are released if it is deemed that they will be able to survive. Otherwise they are euthanized at the trap site. The relative low incidence of nontarget take by TWSP indicates that animal suffering is very limited under the Preferred Alternative than under the other alternatives.

Comment 11: The commentor stated that, as given in Section 3.4.2.3, it was reassuring that TWSP personnel abide by relevant laws and regulations when conducting AMDM, but that obeying laws and regulations is not a mitigation measure, but a minimum standard expected of public employees and all citizens. It should be removed.

Response 11: In essence, the commentor is partially right. However, abiding by laws and regulations is mitigation because relevant laws and regulations were put into place by the public to mitigate problems. Therefore, it is vital that the public know that these relevant laws and regulations are being followed, even though it mostly goes without saying. TWSP standard operating procedures set forth by WS Directives emphasize adherence to laws and regulations and thus it is, in essence, mitigation to lessen impacts on the environment. Not all people that read the EA and not all federal agencies abide by State laws, and thus it is important to state. Therefore, the mitigation was not removed from the EA.

Major Issues

Cooperating agencies and the public helped identify a variety of issues deemed relevant to the scope of this EA. These issues were consolidated into the following 5 primary issues that were considered in detail in the predecisional EA:

- Effects on Target Aquatic Mammal Species Populations
- Effects on Nontarget Species Populations, Including Threatened and Endangered (T&E) Species
- Humaneness of Control Techniques
- Effects of Beaver Dam Removal on Wetland Wildlife Habitat
- Effects of AMDM Methods on Public Safety

Affected Environment

The areas of the proposed action is to continue conducting AMDM along streams, rivers, lakes and other areas where aquatic mammals are causing damage to agriculture, property, natural resources or public health and safety to private, public, and Tribal properties in Texas. AMDM will only be conducted where the appropriate Agreement for Control or Work Plan is in place allowing AMDM methods to be used and at the request of TPWD, Tribe, or other Federal Agency that manages land. The current program's goal and responsibility is to provide service when requested within the constraints of available funding and manpower.

Alternatives Analyzed in Detail

Three potential alternatives were developed to address the issues identified above. Seven additional alternatives were considered, but not analyzed in detail. A detailed discussion of the anticipated effects of the alternatives on the objectives and issues is described in Chapter 4 of the EA. The following summary provides a brief description of each alternative and its anticipated impacts. Table 3 in the predecisional EA summarizes the environmental consequences (issues) of each of the alternatives in a table format.

Alternative 1. Continue the Current Federal AMDM Program (Proposed Action/No Action). Consideration of the No Action alternative is required under 40 CFR 1502.14(d), and provides a baseline or the environmental *status quo* for comparing the potential effects of all the other alternatives. In this EA, the "No Action" alternative is consistent with CEQ's definition. In the case of the AMDM EA for Texas, the No Action Alternative was the equivalent of the Proposed Action Alternative and the Current Program. Alternative 1 benefits individual resource owners/managers, while resulting in only low levels of impact on target and nontarget wildlife populations, minimal potential to adversely impact ecosystems, very low risks to or conflicts with the public, and low risk to T&E species. Current lethal methods available for use are fairly selective for target species and appear to present a balanced approach to the issue of humaneness when all facets of the issue are considered. The "No Action" alternative is a procedural NEPA requirement (40 CFR 1502.14(d)), and is a viable and reasonable alternative that could be selected. It will serve as a baseline for comparison with the other alternatives.

Under the current program, TWSP responds to requests for AMDM to protect human health and safety, agricultural crops and resources, property, natural resources, T&E species, and forestry in Texas. To meet the goal, TWSP has the objective of responding to all requests from private landowners, public agencies, and Tribes for assistance with, at a minimum, technical assistance or self-help advice, or, where appropriate and where cooperative or congressional funding is available, direct damage management assistance with

professional TWSP Specialists conducting damage management actions. An IWDM approach would be implemented which allows the use of any legal technique or method, used singly or in combination, to meet the needs of requestors for resolving conflicts with beavers or muskrats. Agricultural producers and others requesting assistance would be provided with information regarding the use of effective nonlethal and lethal techniques. In many situations, the implementation of nonlethal methods such as exclusion-type barriers and pond-levelers would be the responsibility of the requestor to implement which means that, in those situations, TWSP's only function would be to implement methods difficult for the requestor to implement, if determined to be necessary. AMDM by TWSP would be allowed in the State, when requested, on private property sites, public facilities or other locations where a need has been documented, upon completion of an *Agreement for Control*. All management actions would comply with appropriate Federal, state, and local laws.

Alternative 2. Technical Assistance Only. Under this alternative, TWSP would not provide any direct control assistance to persons experiencing aquatic mammal damage problems, but would instead provide advice, recommendations, and limited technical supplies and equipment. Lethal AMDM would likely be conducted by persons with little or no experience and training, and with little oversight or supervision. Risks to or conflicts with the public, wetlands, nontarget, and T&E species would probably be more than Alternative 1, and slightly more than or the same as Alternative 3. The effectiveness of TWSP and selectivity of AMDM methods would probably be lower than Alternative 1. Finally as discussed above, frustrated resource owners that have endured recurring losses may resort to the use of illegal or inappropriate techniques that could result in unknown consequences.

Alternative 3 - Nonlethal AMDM Only. This alternative would not allow lethal control or lethal recommendations by TWSP. TWSP would be allowed to use nonlethal control measures including all methods used in AMDM except quick-kill traps, shooting, zinc phosphide, and euthanasia drugs; aquatic mammals would have to be relocated to use methods that live capture them such as leghold traps, cage traps, and snares and these could not be used lethally (i.e., euthanasia following capture). The negative effects on the human environment of selecting this alternative would be more than Alternative 1, and very similar to, possibly slightly less than, Alternative 2 because TWSP would provide some assistance to resource owners and be able to resolve some AMDM problems.

Alternatives considered but not analyzed in detail were:

No Federal WS AMDM. This alternative would consist of no federal involvement in AMDM in Texas. Due to its cooperative structure, TWSP would not be able to provide direct operational management or technical assistance for AMDM issues under this alternative. However, major conflicts would still arise among major state, county, and private entities, which support the continued need for AMDM currently funded primarily through state appropriations to Extension and county government appropriations to the [redacted]. It is probable that some level of AMDM would be implemented, either by another Division within the Texas A&M University System or other state agency, but at a lower level because the entity would have to replace federal funds and personnel currently utilized to provide administrative duties, supervision, and equipment necessary to conduct these activities. Limited assistance would, in many cases, leave resource owners to resolve their own problems with little guidance. In other words, it would be left up to resource owners to conduct AMDM under this scenario. If this were the case, some AMDM methods would likely be used unsafely and improperly, such as the illegal use of pesticides and traps, simply out of frustration by resource owners unable to reduce damage losses to a tolerable level. Therefore, after careful consideration, this alternative, more than any other alternative analyzed in this EA, would not add to the analysis because it is likely that the State would do it anyway, but without federal oversight or participation. Since most funds are appropriated by the State, it is likely that

this alternative would have similar conclusions as the current program. Additionally, employees would not have the ability to attend training programs given by the national WS Program, such as explosives and firearms training. Thus, this alternative will not be considered further by TWSP in this EA.

Compensation for Aquatic Mammal Damage Losses. Compensation would require the establishment of a system to reimburse resource owners for damages. This alternative was eliminated from further analysis because no federal or state laws currently exist to authorize such action for aquatic mammals and because it had many problems associated with it as discussed in the EA.

Bounties. Payment of funds for killing aquatic mammals (bounties) suspected of causing economic losses has not been supported by Texas State agencies such as TPWD as well as most wildlife professionals for many years (Latham 1960). TWSP concurs with these agencies and wildlife professionals because of several inherent drawbacks and inadequacies in the payment of bounties. Therefore, this alternative was eliminated from further analysis.

Eradication and Long Term Population Suppression. An eradication alternative would direct all TWSP efforts toward total long term elimination of aquatic mammals in entire cooperating counties or larger defined areas in Texas. In Texas, the eradication of beaver and muskrat is not a desired goal of state agencies, although these species may be taken by the general public in areas where they are causing damage. This alternative was eliminated from further analysis because TWSP and TPWD oppose eradication of any native wildlife species, and because it is generally impossible to achieve. Long term population suppression is not a desired goal of state agencies or of TWSP for the analysis area as a whole but could be implemented for localized areas prone to aquatic mammal damage under the current program alternative (ie. urban neighborhoods). The impacts of localized population suppression are analyzed in the EA.

Suppression would direct TWSP efforts toward managed reduction of certain problem populations or groups. When a large number of requests for WDM are generated from a localized area, TWSP would consider suppression of the local population or groups of the offending species, if appropriate. However, it is not realistic, practical, or allowable under present WS policy to consider large-scale population suppression as the basis of TWSP. Typically, TWSP activities in Texas are conducted on a small portion of the area inhabited by aquatic mammals and therefore suppression is usually only very localized.

Reproduction Control. A review of research evaluating chemically induced and surgically induced reproductive inhibition as a method for controlling nuisance beaver populations is contained in Novak (1998). Although these methods were found to be effective in reducing beaver reproduction by up to 50%, the methods were not found to be practical or were too expensive for large-scale application. At present, no chemical reproductive inhibitors are legal for use for beaver or muskrat. For these reasons, this method will not be considered further by TWSP. Should current research at NWRC with immunocontraceptives be developed to the point of field use, it may be considered for certain situations in AMDM.

Biological Control. The introduction of a species or disease to control another species has occurred throughout the world, but has rarely been successful. In fact, many of the introduced species become pests themselves. This alternative was eliminated from further analysis because this method has many problems associated with it.

Nonlethal required before Lethal Control. This alternative would not allow the use of lethal methods by TWSP as described under the proposed action until nonlethal methods had been attempted to relieve damage caused by aquatic mammals and found to be ineffective or inadequate. Resource owners or managers would

still have the option of implementing nonlethal and lethal control measures and TWSP would continue to recommend them where appropriate, but no preventive lethal control by TWSP would be allowed. However, personnel experienced in AMDM generally know when and where nonlethal control techniques would work; this alternative could result in the use of methods that are known to be ineffective in particular situations. This has normally been an alternative considered by TWSP, such as in the FEIS (USDA 1997) and other TWSP EAs such as the Aquatic Mammal Damage Management in Oklahoma EA (1998). This alternative has always been found to have slightly higher negative environmental impacts than the proposed action. In addition, it is TWSP policy that nonlethal AMDM be considered first. Therefore, this alternative was dropped from analysis in this EA.

Comments regarding the Alternative Selection

The following comments were received regarding the selection of an alternative in the Record of Decision suggesting the commentor's preferred alternative:

1. Support Nonlethal before Lethal Alternative.

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of the Proposed Action. I agree with this conclusion and therefore find that an Environmental Impact Statement need not be prepared. This determination is based on the following factors:

1. AMDM, as conducted by TWSP in Texas, is not regional or national in scope. It is a statewide program and the scope was discussed thoroughly in the EA. AMDM in Texas is for the most part conducted at the request of the State Legislature who provides funds and State personnel for these activities. Under the proposed Action, TWSP would continue to assist entities with aquatic mammal damage as necessary. Even if TWSP were not involved, most AMDM would be conducted by state and local government, or private entities that are not subject to compliance with NEPA.

2. The proposed action would pose minimal risk to public health and safety. No injuries to any member of the public are known to have resulted from TWSP AMDM activities. In addition, a risk assessment has analyzed the use of AMDM methods by TWSP (USDA 1997) and these were found to pose only minimal risks to the public, pets and nontarget wildlife species. This issue was addressed in the EA and the Proposed Action was found to have the least impacts.

3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. Almost all AMDM projects conducted by TWSP occur in agricultural and developed areas. All involve wetlands because this is where aquatic mammals live. However, as discussed in detail in the EA, wetlands are not impacted under the Proposed Action. Removal of dams by TWSP restores the wetland characteristics of an area that has been flooded by the beaver pond which does not become a wetland for years.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to aquatic mammal control, this action is not highly controversial in terms of size, nature, or effect. Beaver, nutria, muskrat, and otter populations will not be significantly affected by

AMDM under the Proposed Action, and is likely to be similar under the other Alternatives because the State or private individuals are still likely to respond to problems except on Tribal and federal lands.

5. Based on the analysis documented in the EA, the effects of the proposed AMDM program on the human environment would not be significant. The effects of the activities under the Proposed Action are not highly uncertain and do not involve unique or unknown risks. These activities would occur as State personnel or others would continue to respond to damage complaints. If these personnel were unable to respond quickly under the other Alternatives, a potential exists that could involve unique and unknown risks by non-professionals implementing AMDM and frustrated property owners that have been ineffective with AMDM methods resorting to the illegal use of chemicals.

6. The proposed action would not establish a precedent for any future action with significant effects. All issues under the proposed action were discussed thoroughly, and these would not add cumulatively to any known future actions that would result in significant effects.

7. No significant cumulative effects on the quality of the human environment were identified through the EA. The number of beaver, nutria, muskrat and otter taken by TWSP, added to the total known other take of such species, is within the levels sustainable by their populations as determined by TPWD.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources. If anything, the Proposed Action would have beneficial effects on these resources.

9. An evaluation of the proposed action and its effects on T&E species determined that no significant adverse effects would occur to such species. This is supported by the 1992 Biological Opinion (USDA 1997) and a subsequent Texas TWSP Biological Assessment with Concurrence from USFWS in 2003. No other T&E species have been listed in Texas since then. The species that could most likely be affected is the Houston toad. TWSP does not conduct dam removal in the 2 Counties where it is found to mitigate potential problems, therefore, there is no effect on this species.

10. The proposed action would be in compliance with all Federal, State, and local laws imposed for the protection of the environment. The proposed activity does not violate the Migratory Bird Treaty Act, the Endangered Species Act, or any other law. As allowed by State law, AMDM is such that the majority of AMDM will apparently be conducted by the State which is not subject to compliance with NEPA if TWSP were not involved.

11. There are no irreversible or irretrievable resource commitments identified by this assessment, except for a minor consumption of fossil fuels for routine operations.

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Decision

I have carefully reviewed the EA and the input resulting from the public involvement process. I believe the issues and objectives identified in the EA would be best addressed through implementation of Alternative 1 (the Proposed or No Action Alternative to continue the current program). Alternative 1 is therefore selected because (1) it offers the greatest chance at maximizing effectiveness and benefits to affected resource owners and managers within current program funding constraints; (2) it will maximize selectivity of methods available; (3) it offers a balanced approach to the issue of humaneness when all facets of the issue are considered; (4) it will continue to minimize risk to or conflicts with the public; and (5) it will minimize risks to nontarget and T&E species. TWSP in Texas will continue to use an IWDM approach in compliance with all the applicable mitigation measures listed in Chapter 3 of the EA.

For additional information regarding this decision, please contact Gary Nunley, State Director, USDA-APHIS-TWSP,

Michael V. Worthen, Regional Director — Date
APHIS-WS Western Region